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Canadian Atlantic Fisheries
Scientific Advisory Committee

CAFSAC Research Document 85/76

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Comité scientifique consultatif des
pêches canadiennes dans l'Atlantique

CSCPCA Document de recherche 85/76

Analysis of the cod stock in NAFO Division 2GH

by

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Abstract

The nominal catches from this stock have ranged from 94,000 t in 1966 to 300 t in 1973. A TAC of 20,000 t was adopted in 1974, and has remained at that level. Since that time the TAC has never been exceeded. The 1978 and 1979 year-classes were the most abundant in the commercial catch in 1984. Previous assessments have indicated that fishing mortalities were below $F_{0.1}$ for this stock for which the estimated MSY catch is 40,000 t.

Résumé

Les prises nominales dans le cas de ce stock ont varié de 94 000 t en 1966 à 300 t en 1973. En 1974, on a fixé un TPA de 20 000 t qui n'a pas changé depuis et qui n'a jamais été dépassé. Les classes d'âge de 1978 et 1979 ont été les plus abondantes dans la prise commerciale de 1984. Des évaluations antérieures ont indiqué que les mortalités par pêche étaient inférieures à $F_{0.1}$ pour ce stock dont le RMS (rendement maximal soutenu) est évalué à 40 000 t.

Catches from this stock have ranged from 94,000 t in 1966 to 300 t in 1973 (Fig. 1). The TAC has been maintained at 20,000 t since its introduction in 1974. Except for 1982, catches have been less than half this level, as indicated below:

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
TAC (000't)	20	20	20	20	20	20	20	20	20	20
Nom. catch	6	4	5	2	3	4	14	2[a]	1[a]	

[a] preliminary.

Commercial catches by country and month are shown in Table 1 and the sampling coverage is indicated in Table 2 for Div. 2H. Catches were once again almost entirely from Div. 2H. Using these data, the catch at age, average length at age, and average weight at age were estimated for 1984 (Table 3). The percentage discrepancy between calculated catch weight and reported catch weight was less than 1%. The 1978 and 1979 year-classes (Table 4) were most abundant while the 1973 year class (age 11) continued to show considerable strength.

The catch at age for the years 1962-71 was presented by Wells (1973) and used in a virtual population assessment. The level of sampling during 1972-77 was very low, consequently, no age distribution of catch was obtained. Catch levels since that time have remained low, apart from that for 1982, but sampling has been sufficient to obtain estimates of catch at age (Table 4).

Catch rates, obtained from Canadian observers on foreign vessels (Table 5) were generally obtained from relatively small catches and showed considerable fluctuation. Catch rates from the Faroese long line fishery have been stable in recent years but showed some decline in 1984.

Estimates of population abundance and biomass were not obtained because of previously mentioned problems with estimates of catch at age and the lack of a suitable catch rate series for tuning.

Previous assessments have indicated that fishing mortalities were below $F_{0.1}$ for this stock for which the estimated MSY catch is 40,000 t. Fishing activity in this area was once again low during 1984 with only 7% of the TAC being caught.

REFERENCE

Wells, R. 1973. Virtual population assessment of cod in ICNAF Divisions 2GH. ICNAF Res. Doc. 73/106, Ser. No. 3069. 6 p.

Table 1. Nominal catches (t) of cod in NAFO Divisions 2GH during 1984.

Month	Can N OT	Can N GN	Can M	Den(F) (LL)	Nor. (LL)	Port.	France	FRG	Poland	GDR	Total
January											
February									33		33
March											
April											
May											
June											
July											
August	20	197		189	9	47					462
September	14	7	12	22	12						67
October					106		4			1	111
November				117	156	2		24	17		316
December			3	187	121			47			358
Total	34	204	15	515	404	49	4	71	50	1	1347

Table 2. Sampling of the commercial catch of cod in NAFO Division 2GH during 1984.

Gear	Qtr.	Country	No. aged	Month	No. meas.	Landings (t) Country/month	Landings (t) Total
LL	3	Norway	30	Sept.	1,068	12	21
		Den(F)	130	Aug.	6,759	189	211
			160		7,827		232
OT	3	Port.	86	Aug.	468	47	47
		Other					79
			86		468		126
LL	4	Norway	125	Oct.	1,975	106	106
				Nov.	1,232	156	277
		Den(F)		Nov.	215	117	304
OT	4	FRG		Nov.	377	24	98
			125		3,799		785
GN	3	Can(N)					204
Total			371		12,114		1,347

Table 3. Estimates of catch numbers, average weight and average length at age from the commercial cod fishery in NAFO Divisions 2GH in 1984.

Age	Average Weight (kg)	Average Length (cm)	Catch numbers Mean No.x 10^{-3}	Catch Std. Err.	C. V.
3	0.591	40.928	3	1.35	0.54
4	0.960	47.756	50	9.93	0.20
5	1.195	51.259	262	15.49	0.06
6	1.635	56.723	103	14.39	0.14
7	2.245	63.055	13	5.36	0.41
8	2.213	62.880	11	5.71	0.53
9	2.566	65.739	65	13.12	0.20
10	3.213	70.744	60	12.42	0.21
11	3.772	74.233	98	13.32	0.14
12	3.919	75.342	9	5.16	0.57
13	6.898	91.000		0.10	1.02
14	6.220	88.000		0.43	1.06

Table 4. Catch at age for cod in Divisions 2GH from 1979-84.

Age	1978	1979	1980	1981	1982	1983	1984
2			17				
3	7		24	1	62	3	3
4	123	72	38	5	103	55	50
5	2254	207	249	23	131	47	262
6	1257	615	332	360	227	29	103
7	201	79	516	423	1207	18	13
8	108	7	21	906	973	158	11
9	117	1	2	74	2058	108	65
10	108	1		7	128	196	60
11	52	1		4	5	7	98
12	21	1		2	4	1	9
13				1	2		
14				1	2		

Table 5. Catch rates (t/hr) in the directed cod fishery in Division 2H obtained by Canadian observers on foreign vessels. Number in brackets represent the amount of directed catch involved.

Country	Gear	1979	1980	1981	1982	1983	1984
Poland	OT-7	0.58(1067)	0.15(31)	5.03(463)	0.78(35)	0.39(38)	
Portugal	OT-6/7	0.51(106)	1.09(100)		1.33(224)		0.69(41)
FRG	OT-7		1.72(415)		2.97(3238)		0.68(50)
GDR	OT-7		1.55(362)	1.39(212)	1.23(245)		
Den-F[a]	LL-4			0.32(1448)	0.30(1864)	0.35(871)	0.26(333)

[a]CPUE = c/1000 hooks.

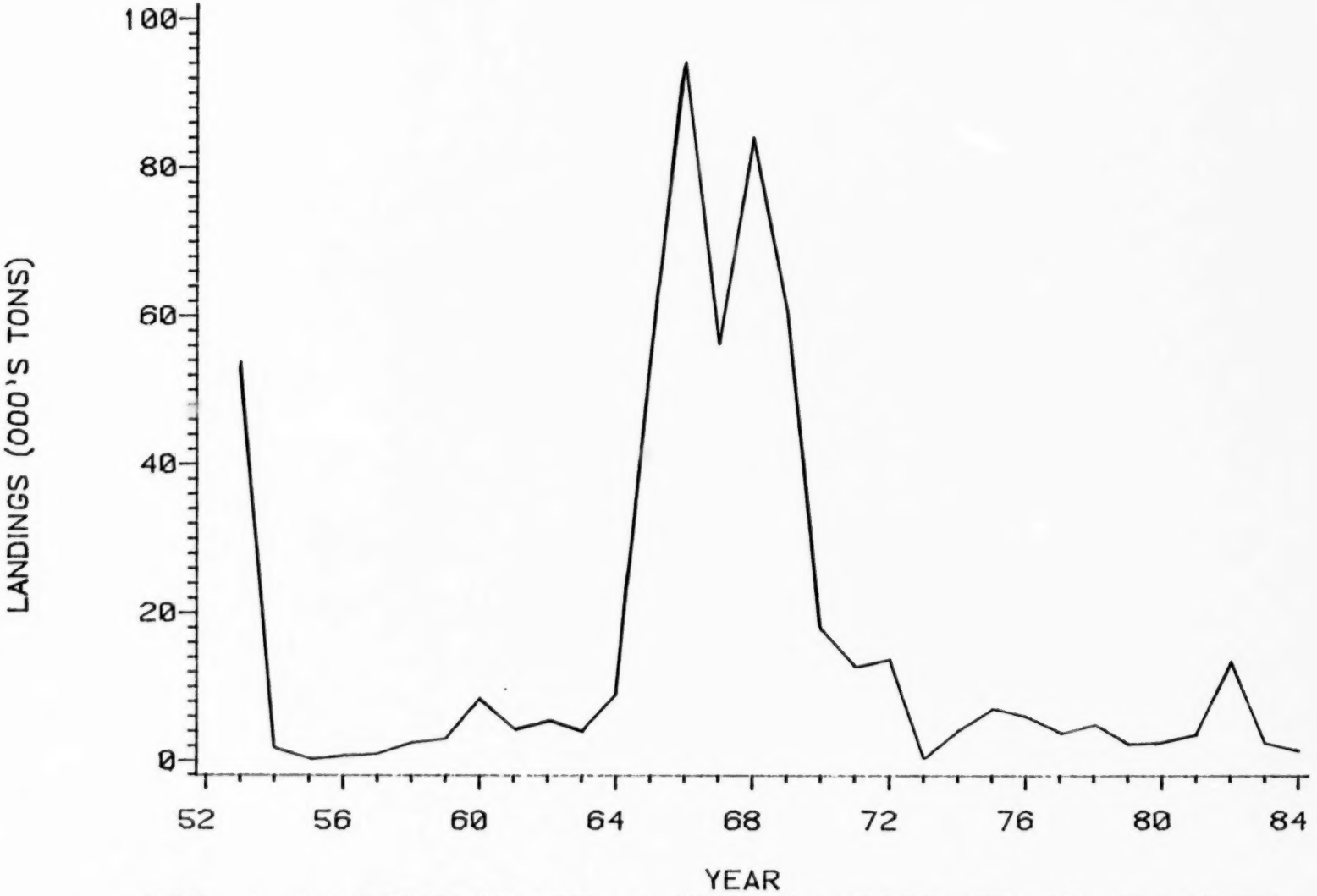

FIG. 1. LANDINGS OF COD IN NAFO DIVISIONS 2GH IN THE YEARS 1953-84.